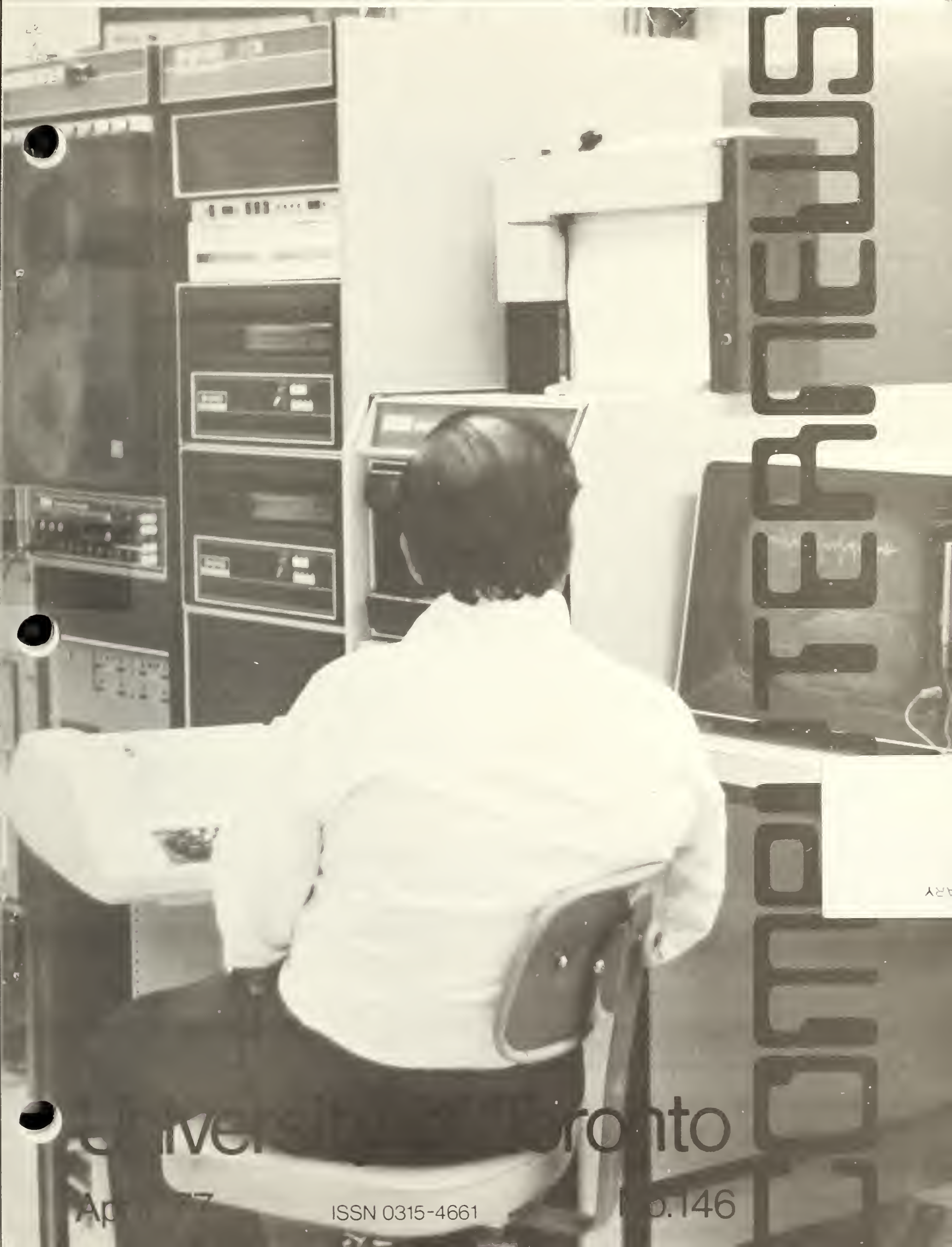


ComputerNews

University of Toronto

April 1977 ISSN 0315-4661 No.146

COMPUTERNEWS is a monthly publication produced by the University of Toronto Computer Centre. Enquiries or contributions should be directed to the Editor, Janet Campbell or the Assistant Editor, Margo Harvie in the Engineering Annex, room 206 or (416)-978-4990. Layout and ATS typing are provided by Kathryn Bourne. Subscription changes should be directed to the Information Office, Engineering Annex, room 206 or (416)-978-4990.

....

Permission is granted to reprint articles from COMPUTERNEWS for noncommercial purposes provided the author, publication and issue are acknowledged.

p-t-0507.(5)

University of Toronto
Computer Centre
11 King´s College Road
TORONTO Ontario
M5S 1A1

416/978-4990

Janet Campbell, Editor

TABLE OF CONTENTS

PAGE

Computer Research Facility 1
Off the Top 1
1977 ACM George B. Forsythe Student Paper Competition 4
The 8th Ontario Universities Computing Conference 4
General Purpose Time-Sharing Machine 5
Hours of Service - Victoria Day Weekend 5
Book Review 5
P.S. ... Programming Services That is! 6
WYLBUR Words 6
MVS Upgrade 6
Fortran H-Extended Compiler Upgraded 7
Datatext 3.2 7
$ACCT Cards Expiry Date 8
HSJS WATFIV to be Updated 8
Attention SPSSQ Users 8
APL Print Train Notes 9
New 4 DOCWS 9
Discover the Quantal Assay with Datatalk 10
New Customer Services Representative 12
Personnel Changes 12
GPJS - Software Usage Statistics 13
S/370-165-II Reliability 13
HSJS Monthly Statistics 16
Interactive Systems Reliability 17
Recent Acquisitions in the Department of Computer Science Library 17
UTCC Computer Equipment 20
UTCC Directory 21

Digitized by the Internet Archive
in 2018 with funding from
University of Toronto

https://archive.org/details/computernewsapri146jane

COMPUTER RESEARCH FACILITY

The photo on the cover of this month's issue of COMPUTERNEWS features the UTCC Computer Research Facility. The Computer Research Facility (CRF) is located in what is left of the Sandford Fleming Building, on the second floor, above the UTCC S/370-165-II machine room.

CRF's goal is to offer services that are not otherwise available through the other departments of the Computer Centre, particularly in the mini and micro computer areas. Two kinds of services are offered by CRF: in-lab services on its PDP-11 machines and general campus-wide consulting services for mini computer users.

In-lab services consist primarily of data acquisition and interactive processing, using one of CRF's PDP-11 based systems. Signals recorded on an analog tape recorder can be sampled through analog to digital converters and stored on a magnetic tape for processing. Strip chart recorder graphs, plots of any kind, pictures or maps can be digitized using one of CRF's digitizing tablets. The data can then be displayed, its validity checked and some interactive processing such as selective plotting or Fourier analyses can be done. In the batch processing areas, CRF also supports software on the UTCC /370 system for accessing digitized data stored on magnetic tape.

CRF also provides support to PDP-11 mini-computer users on campus. If you think that setting up your own mini-computer system would be a good solution to your computing problems, CRF can help you determine what you need and suggest a system configuration tailored to your requirements. If you do not want to be involved in maintaining your system, CRF offers maintenance contracts, software and hardware consulting and can develop, on request, a specialized piece of hardware or software.

If you think that CRF can help you, come to the CRF laboratory (room 207 of the Sandford Fleming Building) or call one of the following people:

Dennis Smith, Manager	978-4800
Clyde Stevens, Assistant Manager and Hardware Services	978-8853
Daniel Guerin, Software and User Services	978-5271
Krishna Patnaik, Lab Co-ordinator	978-4086

Daniel Guerin

OFF THE TOP

'Off the Top' is one of several experiments which we will be trying in the hopes of providing our COMPUTERNEWS readers with a more vital and interesting publication. This column is intended to provide an informal forum for the discussion of ideas, policy, and role of the Computer Centre. We hope that the readers of COMPUTERNEWS, including UTCC staff, will use it as a medium for the exchange of information. If it is successfully received, this column will become a regular item in each month's COMPUTERNEWS.

cont'd...

OFF THE TOP cont'd

This month's column deals with three printing considerations to which we hope you will respond.

Standard Forms - Lined vs Unlined Paper

Recently there has been a debate going on via the Graffiti Board at the Sandford Fleming Terminal. One faction wants the "neat" appearance of either blank paper or its near-equivalent, lined paper reversed. As one advocate stated, "The books I read don't have lines, my output shouldn't either". On the other side, there are users who find that the lines are beneficial, especially when generating dumps or output which has several columns of figures.

UTCC's supplier will provide our current standard form with or without lines for the same price. Several years ago UTCC did a survey which indicated that most customers preferred their paper lined. It is possible, however, that the makeup and needs of our computing community has changed and that blank forms are now preferrable. If there is enough interest or concern about this issue, we are willing to undertake a survey to see if the line advocates are still in a majority. If this item is of interest to you please contact Don Gibson, or any member of the Publications Group.

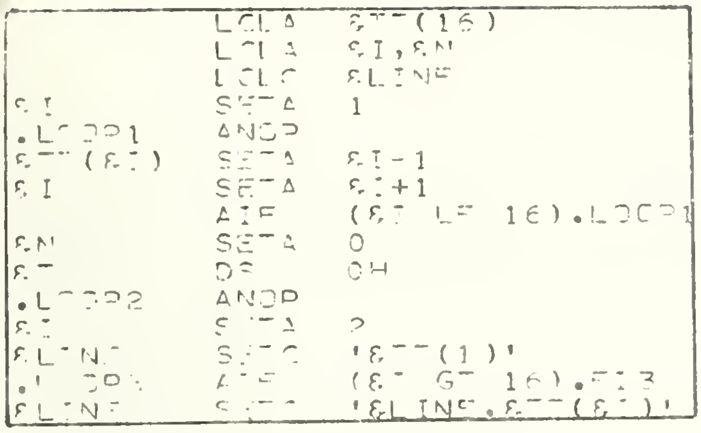
High Quality Printing

At present, we are offering free of charge (other than the forms mount) Polyester Carbon ribbons for those customers who require crisp printing for reproduction purposes. This service has become increasingly popular and it is expected that the demand for it may increase with WYLBUR now in production. Unfortunately, the carbon ribbon is expensive (about $25.50) and is only good for about 15,000 lines of printing at the cost of $1.70 per 1000 lines. $1.30 is our current priority 6 rate for standard printing. In short, we can't afford to continue offering this service free of charge. Currently, there are three alternatives:

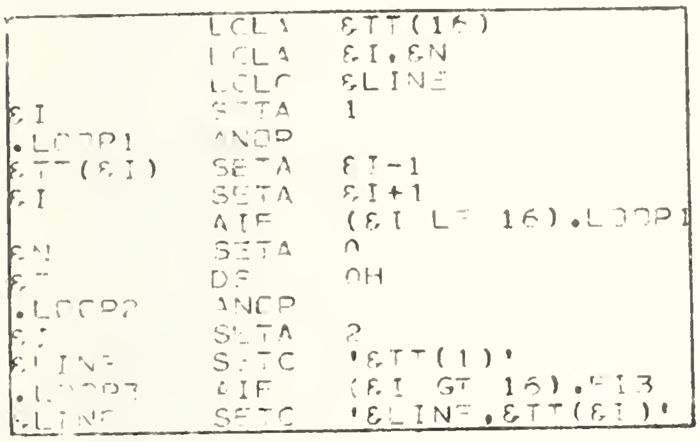
1. Continue using carbon ribbons and surcharge for the number of lines printed. This charging would have to be done manually at present with the possibility of some fairly major changes being made to the charging algorithm to automatically surcharge.
2. Have customers who wish to use carbon ribbons supply them (as they presently do for Special Forms).
3. Use an alternate ribbon. This solution, if it provides acceptible print quality is the one preferred by UTCC. The only cost would be the cost of the special forms mount. One possibility which we have investigated is a first-pass regular nylon ribbon. Another possibility is a new deluxe nylon ribbon. The following is an example of how each looks - (examine the sample printout first then turn the page upside down to tell which is which. The samples include a first-pass nylon ribbon, a deluxe nylon ribbon and a carbon ribbon).

cont'd...

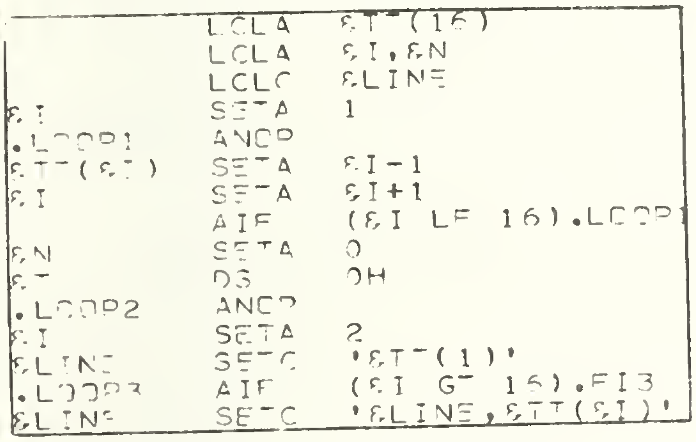
OFF THE TOP cont'd



```
         LCLA   &TT(16)
         LCLA   &I,&N
         LCLC   &LINE
&I       SETA   1
.LOOP1   ANOP
&TT(&I)  SETA   &I-1
&I       SETA   &I+1
         AIF    (&I LE 16).LOOP1
&N       SETA   0
&T       DS     0H
.LOOP2   ANOP
&I       SETA   2
&LINE    SETC   '&TT(1)'
.LOOP3   AIF    (&I GT 16).FI3
&LINE    SETC   '&LINE,&TT(&I)'
```



```
         LCLA   &TT(16)
         LCLA   &I,&N
         LCLC   &LINE
&I       SETA   1
.LOOP1   ANOP
&TT(&I)  SETA   &I-1
&I       SETA   &I+1
         AIF    (&I LE 16).LOOP1
&N       SETA   0
&T       DS     0H
.LOOP2   ANOP
&I       SETA   2
&LINE    SETC   '&TT(1)'
.LOOP3   AIF    (&I GT 16).FI3
&LINE    SETC   '&LINE,&TT(&I)'
```



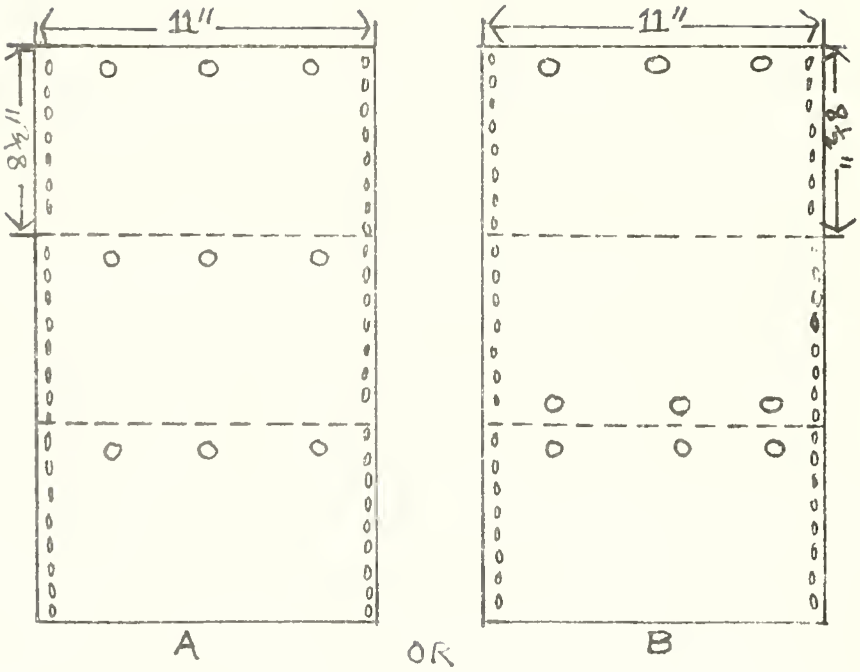
```
         LCLA   &TT(16)
         LCLA   &I,&N
         LCLC   &LINE
&I       SETA   1
.LOOP1   ANOP
&TT(&I)  SETA   &I-1
&I       SETA   &I+1
         AIF    (&I LE 16).LOOP1
&N       SETA   0
&T       DS     0H
.LOOP2   ANOP
&I       SETA   2
&LINE    SETC   '&TT(1)'
.LOOP3   AIF    (&I GT 16).FI3
&LINE    SETC   '&LINE,&TT(&I)'
```

1.CARBON 2.NYLON 3.DELUXE NYLON

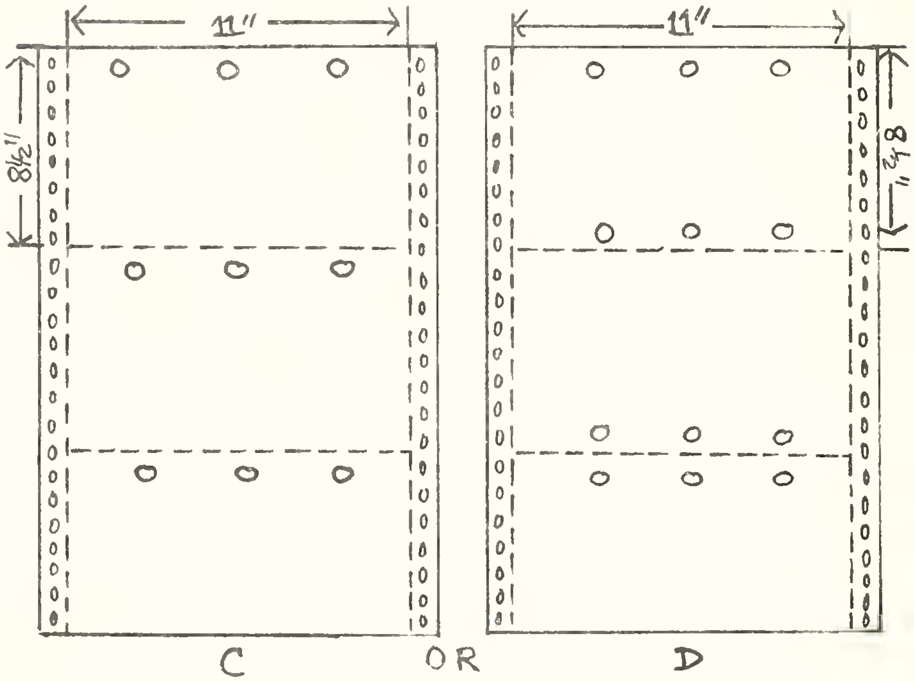
Let us know how you feel about these alternatives... it's your choice.

New Type of Special Form

Some interest has been expressed in a new special form for three ring notebooks. They would look like this:



WITHOUT SIDE PERFORATIONS



WITH SIDE PERFORATIONS

We haven't looked into cost factors for this form yet, but if sufficient interest is shown, we will investigate further.

If you have an opinion on any other subject which you would like to see discussed in this column, contact myself or a member of the Publications Group.

Don Gibson

1977 ACM GEORGE E. FORSYTHE STUDENT PAPER COMPETITION

The George E. Forsythe Student Paper Competition is open to any undergraduate student who has not received a bachelor's degree prior to April 1, 1977. High school students are also eligible to participate in this competition. Papers on any topic related to computer science and information processing are solicited. The best papers will be published in Communications of the ACM and the authors will receive monetary awards.

Papers are due by September 15, 1977. Students who plan to submit a paper are requested to send a notice of intent to the ACM Student Paper Competition, c/o Professor J.A.N. Lee, Computer Science Department, Virginia Polytechnic Institute, Blacksburg, VA 24061. This notice must be received by June 30, and should state (1) student author's name and address; (2) name of school, school year and author's age; (3) name of sponsor, if any (e.g. faculty member or ACM chapter); and (4) proposed title of the paper and one sentence giving the subject of the paper.

THE 8TH ONTARIO UNIVERSITIES COMPUTING CONFERENCE

The 8th Ontario Universities Computing Conference will be held at the University of Waterloo, May 30-31, 1977. The conference will explore new computing technologies and new approaches to computing in the areas of teaching, research, administration and computing services.

The Preliminary Agenda includes the following sessions:

Experiences in the Planning and Administration of University Computing

- The Administration of Computing in Universities
- Planning on a Five-Year Basis
- Computing Requirements in the Faculty of Environmental Studies
- A Structured Evaluation of Computing Systems
- The Selection of A Time-Sharing Facility

Computing Tools

- The Development of a Large Social Science Document Retrieval System
- Digital Sound Generation in Musical Composition and Research
- Analysis of Variance: A Checklist for User Problems and Library Software
- ALGOL as a Programming Language for Researchers
- Computerized Typesetting of Technical Documents

Computers in Education

- Microprocessors in the University Environment
- A Microprocessor Facility for Undergraduate Elec. Engineering Instruction
- Batch vs Interactive Computing in Manufacturing Engineering
- ECOSYS: A Computer Exercise in ECOSYSTEM Management

The Future, Library Automation Systems

Computer Science Education

- Computer Science: Its Link to Other Disciplines
- Learning by Doing
- Teaching Students Computing
- Is it Harmful for Students to Learn How to Program?

cont'd...

THE 8TH ONTARIO cont'd

Computers and the Management of Administrative Services

Management Training for Technical People

Further details on the individual sessions and papers and copies of the registration form are available at the UTCC Information Office.

GENERAL PURPOSE TIME SHARING MACHINE

During the past month, with the aid of the responses from the General Purpose Time-Sharing survey, a detailed list of specifications for a time sharing machine was drawn up. The list is comprised of the following major areas:

Hardware
System Software
Application Software
Documentation
Reliability

Six major computer manufacturers have been asked to respond to the specifications before April 29, 1977.

From their responses we will develop a short list of the top two or three vendors. We hope that by the end of June we will be able to make a recommendation for a time-sharing system that will satisfy your needs.

Ralph Lombardi

HOURS OF SERVICE - VICTORIA DAY WEEKEND

The following hours of service will be in effect during the Victoria Day weekend:

	MAY 21 (SATURDAY)	MAY 22 (SUNDAY)	MAY 23 (MONDAY)
S/370-165-II	10:00-18:00	10:00-18:00	CLOSED
S/360-65	10:00-18:00	10:00-18:00	UNATTENDED

Normal hours of service will resume on Tuesday, May 24, 1977.

BOOK REVIEW

Programmers wishing to convert a program from FORTRAN to PL/I or, conversely, from PL/I to FORTRAN will find the book by Gary Deward Brown, FORTRAN To PL/I Dictionary, PL/I To FORTRAN Dictionary worthwhile reading. This dictionary, published by John Wiley and Sons illustrates most of the standard programming routines in each language and their equivalents in the other language. The author's style is clear and concise and the copious examples and alphabetical format make the conversions easy to reference and understand. Programmers attempting conversions in these languages should find this book to be a valuable aid. It is available as a reference text in the UTCC Technical Reference Centre, Engineering Annex, Room 206.

Herb Kugel

P.S. ... P.S. ... P.S. ... P.S. PROGRAMMING SERVICES THAT IS!

Programming Services handles the development of computing applications for UTCC users who lack the time, manpower, or plain desire to develop their own application systems.

We operate on a contractual basis. Once we have identified your computing requirements we estimate the time and dollars involved in satisfying them ... and we commit ourselves to our estimate.

In fact, we have quite a reputation as a group who delivers. Over the last sixteen months we have completed over sixty projects ranging from the production of one hundred labels (a project that took 3 hours) to one that involved the analysis, design and programming of a major administrative system (over 2 man-years of effort).

We program in PL/I, APL, MARK IV, SPSS and FORTRAN; we talk in English as well as bits and bytes; and to top it off, we enjoy our work tremendously.

For more information on Programming Services, watch for the P.S. column in future issues of COMPUTERNEWS.

Helen Peacock (P.S.S.)
Programming Services Supervisor

WYLBUR WORDS

The WYLBUR system has now been installed for testing on the S/370-165-II. WYLBUR provides text editing and job entry/output services at typewriter terminals.

Users wishing to test WYLBUR at this time, should contact the Accounting Office at 978-8703 to have their S/370 Service Access code enabled for this service.

The USERBOOK module 3.3WYLBUR is now available and provides introductory information on WYLBUR. The WYLBUR Reference Manual has been sent to the printer and should be available by the time this issue of COMPUTERNEWS is published.

Courses for WYLBUR will be offered in June. UTCC plans to offer an introductory course for TSO users, another for programmers who have not used a terminal system and another for administrative/secretarial users. Details on these courses will be announced later.

Users with suggestions, problems, or inquiries about WYLBUR should contact Ian Darwin at 978-7318.

Ian Darwin

MVS UPGRADE

Work continues on the evaluation and programming for the planned conversion to MVS this summer.

Benchmarking, tuning and maintenance of MVS continue as well as required system modifications for accounting, Job Entry Subsystem, High Speed Job Stream, TSO, and graphics support.

cont'd...

MVS UPGRADE cont'd

Because of some differences between MVT and MVS, an analysis is being performed to determine a set of accounting algorithms and rates which will minimize the variance in the cost of jobs.

Users with "exotic" programs or users having any doubts about a particular program who would like to have it run under MVS should contact a Computing Co-ordinator or Herb Kugel at 978-7286.

John Chapman

FORTRAN H-EXTENDED COMPILER UPGRADED

FORTRAN H-EXTENDED compiler has been upgraded effective April 17, 1977. This upgrade incorporates the latest set of fixes from IBM (Program Temporary Fixes sets 1006 and 2106) as well as a number of local fixes.

Users who had been given a temporary bypass library to circumvent their H-EXTENDED compilation problem should now revert to standard default catalogue procedures and libraries.

Any questions or problems should be referred to Kin Fong at 978-4927.

Kin Fong

DATATEXT 3.2

A new release of DATATEXT, DATATEXT 3.2, has arrived and has been installed on the S/370-165-II. This is basically a maintenance release and will probably be the last update to an old but still very useful statistical analysis system. Many old bugs have been fixed and the *COMPUTE PLOTS facility has finally been installed. There has been no change in documentation.

Effective May 1, 1977, release 3.2 will be the default version of DATATEXT. This version is accessed by using the procedure DATATEXT, which has undergone major changes in the way in which tape and disk (DISC in the DATATEXT Primer) are used. Complete data file definition cards are now required. For example, to use TAPE unit nn where nn = 1 to 4 or 11 to 20, the user must insert:

```
//FTnnF001 DD  file definition
```

To use DISC n, where n = 1 to 8, the user must insert:

```
//FT2nF001 DD  file definition
```

The main new feature of release 3.2 is the set of four free-standing utilities for manipulating DATATEXT system files. They are:

- DTXTSPSS to convert DATATEXT system files to SPSS system files. To use this utility, run the following job:

```
// EXEC DTXTSPSS
//DATATEXT DD definition of DTX file
//SPSS     DD definition of SPSS file
```

This utility is currently available.

cont'd...

DATATEXT 3.2 cont'd

- SPSSTDTX to convert SPSS system files to DATATEXT system files.
- DTXSORT to sort a DATATEXT system file.
- DTXTRACT to extract a subset of variables from a DATATEXT system file.

Some difficulty has been experienced in installing these last three utilities, but their availability will be announced in the DATATEXT 'news' printed with every DATATEXT job. Anyone wishing further information or experiencing any difficulty using DATATEXT should call John Roth at 978-6878.

John Roth

$ACCT CARDS EXPIRY DATE

In September 1976, UTCC implemented an Access Control mechanism on the High Speed Job Stream. Since then, HSJS users have been required to include a $ACCT card in their jobs or to run a CLASS=W job on their S/370 Service Access Code. All $ACCT cards will automatically expire on May 30, 1977. Users wishing to continue using the HSJS with $ACCT cards should contact the UTCC Accounting Office or their local Computing Co-ordinator to obtain new $ACCT cards. The new cards will be effective on May 1, 1977 and will expire on May 30, 1978. Note that during May, 1977, users will be able to use either the old or new $ACCT cards. Users running HSJS jobs on their S/370 SAC will not be affected.

HSJS Service Access Code request forms can be obtained from the Accounting Office located in the Engineering Annex, room 206 or by calling 978-8703.

Henri Schueler

HSJS WATFIV TO BE UPDATED

HSJS users currently have available to them both WATFIV and WATFIVS. With the implementation of MVS, however, WATFIV will no longer be available on the High Speed Job Stream. The region available to WATFIVS users will be identical to that currently available to WATFIV users.

WATFIVS, a superset of WATFIV, contains all of the language features of WATFIV as well as extensions to handle structured programming constructs. WATFIVS is documented in the USERBOOK module 3.6HSWATFIVS. Users who are concerned about this projected change should contact Mark Tapia at 978-8599.

Mark Tapia

ATTENTION SPSSQ USERS

A new version of SPSSQ has been installed on the High Speed Job Stream. The features of the language are documented in the USERBOOK module 3.6HSSPSSQ. Unfortunately, due to system problems the installation was delayed until after USERBOOK holders of the module had received their updates.

cont'd...

ATTENTION SPSSQ USERS cont´d

However, with the installation of the new version, the updated module now describes the version of SPSSQ currently available. UTCC apologizes for any inconvenience this may have caused. In order to avoid this problem in the future, UTCC is currently examining various methods of installing test versions of language processors which allow the user to specify which version should be invoked.

Mark Tapia

APL PRINT TRAIN NOTES

Nearly 300 APLFULL print train mount requests were logged by UTCC users during the two months that the print train has been available for operation.

Users new to the SHARP APL FILEPRINT utility programs which reside in the workspace, 1 FILEPRINT, should note that print output is returned by campus mail, or otherwise, according to the DELIVERY INSTRUCTIONS of the FILEPRINT request form. Also available in the workspace 1 FILEPRINT are the options COPIES=number of copies, and FORMS=UTCC forms code options. To specify these options type

COPIES=number of copies(up to 25)
and/or
FORMS=UTCC forms code

in the SPECIAL INSTRUCTIONS of the SHARP APL FILEPRINT request form.

The APLFULL print train is requested by 7000 series forms codes. Two common forms codes are:

FORMS=7001	(APLFULL, standard blank, 11" by 15" paper)
FORMS=7021	(APLFULL, blank 11" by 9 1/2" paper)

To make a SHARP APL FILEPRINT request, type

```
    )LOAD 1 FILEPRINT  (load the work-
                          space 1 FILEPRINT)
```

and then

```
    PRINTREQ  (execute the conver-
               sational input program
               for FILEPRINT requests).
```

The program, PRINTREQ, will query you for the details of the FILEPRINT request and then log the request.

For further details on new facilities now available with the APLFULL print train, please refer to the 1 HOTNEWS article, APLFULL PRINT TRAIN - NOW AVAILABLE, (7/March/1977, NEWS 47).

Ernst Goetze

NEW 4 DOCWS

The new SHARP APL workspace, 4 DOCWS, is superior to 4 WSL for generating formatted workspace functions and variables listings destined for the APLFULL print train. New features include:

- automatic listing and formatting of all workspace objects, including functions and global variables

cont´d...

NEW 4 DOCWS cont´d

- comprehensive workspace environment information

- function and variable listings are annotated with real storage requirements and, in the case of variables, with datatype, shape, rank and storage requirements

- highly reduced likelihood (compared to 4 WSL) of WSFULL and SYMBOL TABLE FULL errors due to the use of external (file) storage as a working area and an optimized listing strategy

For further details, please refer to the 1 HOTNEWS article, NEW 4 DOCWS - HIGHSPEED AUTOMATIC WORKSPACE DOCUMENTATION, (21/April/1977, NEWS 49) or to the workspace documentation for 4 DOCWS in 4 DOCWS, or the SHARP APL CATALOG.

Ernst Goetze

DISCOVER THE QUANTAL ASSAY WITH DATATALK

The Quantal Assay, sometimes called probit analysis after the work of C.I. Bliss in the 1930´s, is a statistical technique that should be well-known to workers in biomedical and biological research. The method has a good theoretical basis - maximum likelihood - and has found its way, in recent years, into sciences such as economics and sociology. Perhaps a major drawback of the method has been its computational complexity which makes it difficult to maintain accuracy when doing the computations by hand or even on a programmable calculator.

Now DATATALK has come to the rescue. To illustrate how we can be of use in probit analysis applications, we will work with a sample set of data which resulted when a toxic spray was applied to Macrosiphoniella sanbori (the common chrysanthemum aphid).

The basic input is a number of stimulus (dose) levels, a corresponding number of samples drawn from a homogeneous population (each sample to receive one level of the dose) and finally, a measure of the success/failure rate of the dose with respect to some easily discernible criterion (often, the DMB criterion - apparently dead, moribund, or badly affected).

To batches of about 50 aphids, we applied doses of 2.6, 3.8, 5.1, 7.7 and 10.2 mg/litre concentrated solution in spray form and noted, by the DMB criterion, 6, 16, 24, 41, and 44 less aphids.

```
Dose Z::=  2.6 3.8 5.1 7.7 10.2

     N::=  50   48   46   49   50

     R::=   6   16   24   41   44
```

where N is the sample size at each dose level and R is the DMB response. The natural mortality rate over the duration of the experiment was deemed negligible, so there was no need to account for it in the probit calculations that we did. The data itself suggests a mortality rate of about 50% with a dose of about 5 mg/litre, and of about 90% with a dose of about 10 mg/litre.

cont´d...

DISCOVER THE QUANTAL cont´d

As can be seen in the table below, probit analysis can also provide the mean response to a given dose. For example, the mean response to a dose at 5.0 mg/litre concentration is a 52% mortality rate and, with 95% confidence, the mortality rate in any given application of the spray with 5.0 mg/litre concentration will be 52±1.8%.

```
Program:   P 5.0 6.0 7.0 8.0 9.0 10.0

         PER CENT  CONFIDENCE INTERVAL
DOSE     RESPONSE    (95 PER CENT)
-------------------------------------
 5.0       52.0       50.2      53.7
 6.0       64.9       63.1      66.5
 7.0       74.6       72.9      76.3
 8.0       81.7       80.1      83.3
 9.0       86.9       85.3      88.3
10.0       90.5       89.1      91.8
```

Conversely, there is another way of looking at these results, i.e. from the point of view of performing an assay. For example, the probit analysis of the data which appears in the table below shows that if we observe an average response rate of 50% mortality with the repeated application of a dose (whose strength is unknown) then, almost surely, that dose must have a concentration of 4.87±0.12 mg/litre.

```
Program:   DOSE 100x0.5 0.6 0.7 0.8 0.9

PER CENT            CONFIDENCE INTERVAL
RESPONSE   DOSE       (95 PER CENT)
---------------------------------------
  50.0     4.87       4.75      4.98
  60.0     5.58       5.45      5.72
  70.0     6.48       6.31      6.66
  80.0     7.73       7.48      7.98
  90.0     9.85       9.44     10.27
```

**Caution: These latter results do not have the strength of the first results since the probit analysis of dose on response should be sought in order to make statements about the mean dose for a given response. However, for large samples, the assay interpretation is a reasonable one and a common application of regression techniques. The interval estimates returned by the program DOSE are too small if one is using probit analysis to solve a problem of calibration.

Finally, as a third application of probit analysis, the maximum-likelihood estimate for the probit line is:

$$y = 2.147 + 4.143x, \quad x=\log(z)$$

and the slope, 4.143, can be used in comparative studies of the relative potency of such chemicals.

If the use of probit analysis in problems similar to the one above is of interest to you, call DATATALK at 978-6710.

DATATALK´s programs for doing the quantal assay are now available in the SHARP APL workspace, 102 PROBIT. Interested users should also refer to the 1 HOTNEWS article, NEW 102 PROBIT - DISCOVER THE QUANTAL ASSAY, (21/April/1977, NEWS 50), and to the SHARP APL CATALOG documentation for further details.

Ernst Goetze

NEW CUSTOMER SERVICES REPRESENTATIVE

I would like to welcome Mr. André LaBrèche, newly hired as a representative with UTCC's Customer Services Department.

André has a B.A. in Economics from Laurentian University and was a Computer Programming Graduate from Control Data Institute.

He has worked with NCR for four years, starting as a junior programmer and eventually becoming a Vocational Systems Analyst. As part of his latter duties, he received substantial experience related to marketing EDP services and systems, primarily in the financial banking area.

Andre's prime contacts will be with the departments previously serviced by Bill Gillart. He can be contacted at 49 St. George St., room 203, telephone 978-6875.

Bill Foster

PERSONNEL CHANGES

Leaving the Centre this month are Beverly Martin and myself. Bev is leaving her position as Operations' secretary to work in operations elsewhere. I am going to New College to take on the duties of secretary to the Dean of Women. Best of luck from all of us to Bev and from myself to all of UTCC, "I loved working with you, you're a nice bunch of people and I'll miss you."

Joining UTCC this month are Andre Labreche, Carl Stacy and John Bradley. Andre is working for Customer Service, John is programming for Applications Support and Carl is a Design Engineer with CRF. Welcome all, we look forward to working with you.

Zelda Anderson, Information Systems, has been promoted. Zelda has taken on the responsibility of Supervisor of Data Entry. Congratulations Zelda!

June Bridges

Is There A Computer Application In Your Future?

Developing
A Computer Application
Shouldn't Be A Game of Chance

●

PROGRAMMING SERVICES WILL
HELP YOU GET STARTED

**CALL OUR CUSTOMER
SERVICE GROUP
AT
978-6021**

UTC

university of toronto
computer centre

GPJS - SOFTWARE USAGE STATISTICS

The following chart summarizes the software usage per classified procedure and program name for the General Purpose Job Stream from March 2, 1977 to April 1, 1977.

	USES	
SOFTWARE	(#JOBSTEPS)	(%)
ALGOL	14	0
APLSV	16	0
ASM	272	1
BMD/BMDP	404	1
COBOL	450	1
CSMP	170	1
DATATEXT	96	0
DBUGUTIL	9	0
DISKUTIL	2,622	8
DSUTIL	4,614	14
DYNAMO	146	0
FORMAC	4	0
FORTRAN	10,024	31
GPSS	1,402	4
GRAPHICS	2,046	6
JCLUTIL	162	0
LISP	9	0
MARKEXAM	26	0
MARKIV	527	2
MPS/MPSX	272	1
OSUTIL	233	1
PAPERTAP	148	0
PL/I	2,449	8
RPG	80	0
SAS	183	1
SERVAID	150	0
SNOBOL	1,123	3
SORTMERG	941	3
SPEAKEZ	59	0
SPSS	3,040	9
TAPEUTIL	337	1
TIPRS	103	0
TSO	52	0
WYLBUR	54	0
XFR	237	1
TOTAL	32,474	

Kin Fong

S/370-165-II RELIABILITY

The reliability statistics for March indicate an uptime percentage of 97.9 while the average number of unscheduled IPL's per day reached .94. The number of scheduled hours of production for March totalled 500.

MONTHLY COMPARATIVE FIGURES

MONTH	% UPTIME	UNSCHED. IPLs/DAY
Jan/76	99.1	0.43
Feb/76	98.9	0.97
Mar/76	96.8	1.03
Apr/76	99.3	0.52
May/76	98.8	0.67
Jun/76	96.5	0.97
Jul/76	96.4	0.72
Aug/76	99.4	0.47
Sep/76	98.4	0.86
Oct/76	96.9	0.83
Nov/76	98.2	1.10
Dec/76	99.3	0.48
1976	98.2	0.75
Jan/77	99.2	0.76
Feb/77	97.7	0.60
Mar/77	97.9	0.94

The percentage breakdown for total system downtime for March was:

HARDWARE: 485 minutes (76.5%)
SOFTWARE: 120 minutes (18.9%)
OTHER : 29 minutes (4.6%)

The major events contributing to these downtime totals were as follows:

March 23 - 46 minutes down - 2 IPL's

a. 33 minutes attributed to SYS2.PROCLIB becoming "uncatalogued" for an unknown reason. Software corrective maintenance rectified the problem.
b. 13 minutes due to loss of HASP execution.

cont'd...

S/370-165-II cont'd

March 24 - 198 minutes down - 8 IPL's

a. 140 minutes due to motor generator #1 dropping power. Re-initialization hung on new 2944 being installed for EUT. IBM C.E. bypassed the unit to allow a normal power up after switching the motor generators.
b. 10 minutes were required to do a cable swap on GOULD to address 20E.
c. 20 minutes resulted from two supervisor loops.
d. 28 minutes charged to numerous equipment checks on the ITEL controller attached to channel #4.

March 25 - 208 minutes down - 5 IPL's

a. 203 minutes attributed to being unable to IPL the system from channel #4. Two slots of ITEL corrective maintenance resulted in a bad card being replaced in the CONTROLLER.
b. 5 minutes charged to a HASP catastrophic error.

March 28 - 40 minutes down - 0 IPL's

a. All time was required by IBM to rectify a wiring error created during a 2870 engineering change.

March 31 - 54 minutes down - 0 IPL's

a. 49 minutes due to re-occurring equipment checks on channel #4. To isolate the problem, ITEL engineers swapped a number of cards to the channel #3 controller and when the error occurred in that unit, the bad card was found and replaced.
b. 5 minutes charged to a 2-step supervisor loop.

Paul Scarborough

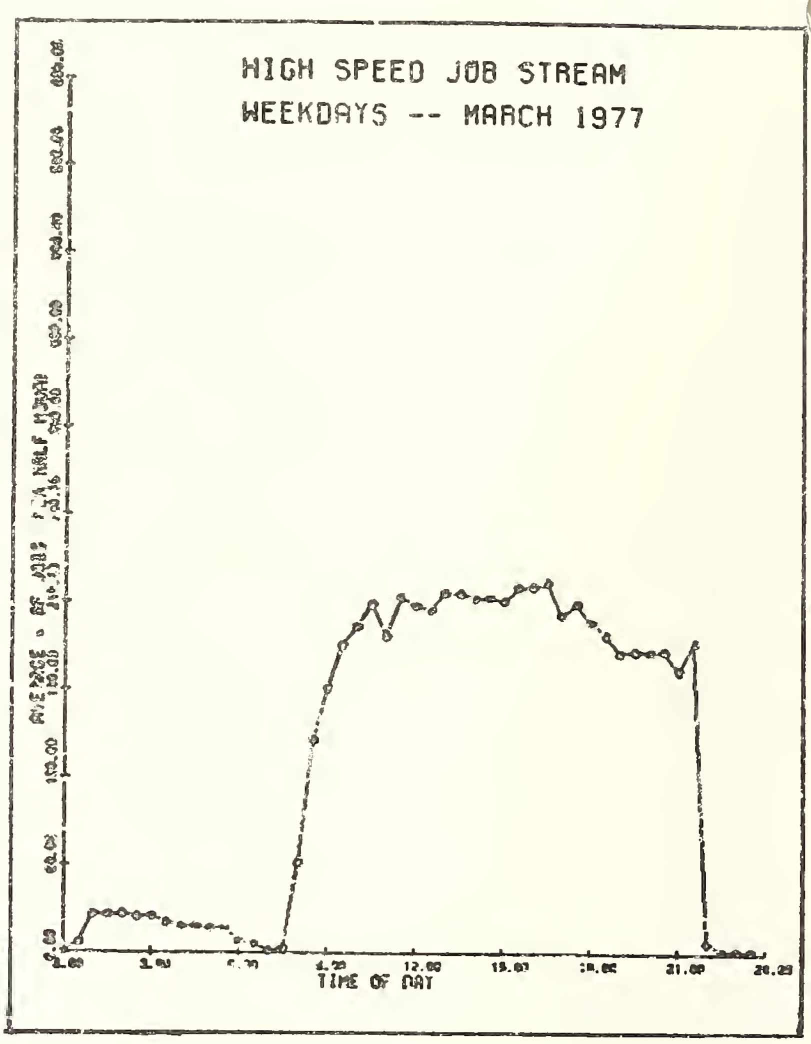
```
                    DOWNTIME REPORT ON   S/370   FOR MAR 77


-------------------------------------------------------------------------------------------------------------------------------
|                                                      REIPLS(FREQ) // DOWNTIME (MN)                                          |
| DAY  REIPL   DNTIME 0    5    10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
======================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
| T  1     0       0  |
| W  2     0       0  |
| T  3     0       0  |
| F  4     0       0  |
| S  5     0       0  |
| S  6     0       0  |
| M  7     0       0  |
| T  8     0       0  |
| W  9     0       0  |
| T 10     2      12  |□□**********
| F 11     1       5  |□****
| S 12     0       0  |
| S 13     0       0  |
| M 14     0       0  |
| T 15     0       0  |
| W 16     1       8  |□*******
| T 17     0       5  |*****
| F 18     0       0  |
| S 19     0       6  |******
| S 20     0      10  |**********
| M 21←   2      10  □□********
| T 22     3      19  |□□□****************
| W 23     2      46  |□□********************************************
| T 24     8     198  |□□□□□□□□*************************************************************************************** 198
| F 25     5     208  |□□□□□******************************************************************************************* 208
| S 26     0       0  |
| S 27     0       0  |
| M 28     0      40  |****************************************
| T 29     1       6  |□*****
| W 30     1       7  |□******
| T 31     3      54  |□□□***************************************************
-------------------------------------------------------------------------------------------------------------------------------


LEGEND        : ONE □  =ONE UNSCHED. IPL           TOTAL SCHEDULED HOURS OF PRODUCTION :  500
                ONE *  =ONE MINUTE OF DOWNTIME     TOTAL DOWNTIME (MN)   :  634 , AVG/DAY :  20.45 , AVG/PROD HOUR :   0.65
                                                   TOTAL UNSCHED. IPL'S :   29 , AVG/DAY  :   0.94
                                                   DOWNTIME RATE IS      :  2.11 PERCENT OF SCHEDULED PRODUCTION HOURS
```

HSJS MONTHLY STATISTICS

During the month of March, 1977, 171,922 jobs where processed compared with 224,454 for the previous year, a decrease of 23.4%.

The following charts summarize the HSJS activity for the month of March. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia



RESOURCE USAGE BY PROCESSOR

PROCESSOR	#USES	%TOTAL	TOTAL PER PROCESSOR CPU (MIN)	TOTAL PER PROCESSOR #CARDS READ	TOTAL PER PROCESSOR #LINES PRINTED	AVERAGE PER USE CPU (MIN)	AVERAGE PER USE #CARDS READ	AVERAGE PER USE #LINES PRINTED
WATFIV	73849	(42)	806.81	8281489	11526563	0.011	112	156
PL/C	39293	(22)	980.63	9868470	15191178	0.025	251	386
WATBOL	10642	(6)	209.63	2793827	3326835	0.020	262	312
SP/K	10114	(5)	81.13	526518	1111955	0.008	52	109
LISP	8085	(4)	96.94	1479176	2854415	0.012	182	354
ASMG	7523	(4)	131.75	1575567	2902342	0.017	209	385
SNAP	7179	(4)	120.75	438436	1942523	0.017	61	270
SPSSQ	4852	(2)	88.19	279061	802452	0.018	57	165
UTILITY	4451	(2)	8.31	490583	722131	0.002	110	162
SPITBOL	3130	(1)	25.63	373443	583062	0.008	119	186
ALGOL W	2398	(1)	32.25	922121	972278	0.013	384	405
$ TEST	200	(0)	2.00	35444	41868	0.010	177	209
PLC7.3	118	(0)	0.69	9605	15164	0.006	81	128
ASSIST	42	(0)	0.31	9793	10722	0.007	233	255
WAT5-S	28	(0)	0.13	1942	3280	0.004	69	117
PLUTO	8	(0)	0.00	714	374	0.000	89	46
SP/K M	4	(0)	0.00	164	204	0.000	41	51
SPSS Q	4	(0)	0.00	345	384	0.000	86	96
SIMON	2	(0)	0.00	73	60	0.000	36	30
TOTAL	171922		2585.63	27086771	42017790	0.015	157	244

INTERACTIVE SYSTEMS RELIABILITY

The reliability statistics for the month of March indicate substantial improvement over previous months. The uptimes achieved for APL and ATS were 99.86% and 99.83% of scheduled operation, respectively. The scheduled hours of operation during this month totalled 509, while the number of unscheduled IPL´s per day was 0.13. In addition to the regular schedule, Interactive Services were also available for approximately 128 hours of unattended weekend operation.

The percentage breakdown of total S/360-65 downtime for March was: Hardware - 20 minutes (38.46%), Software - 26 minutes (50%), Other - 6 minutes (11.54%). Four unscheduled IPL´s were required as a result of the system failures. The major events contributing to downtime were as follows:

Mar 2 - 6 minutes downtime attributed to late IPL as a result of IBM maintenance overlapping into normal production hours.

Mar 8 - 20 minutes downtime and 2 re-IPL´s were charged to 3705 hardware malfunction as customer engineer was trying to correct diagnostic errors related to the communications controller.

Mar 15 - 26 minutes downtime and 2 system reloads resulted from an error in the WAIT SVC which abended APL, while at the same time SVC handler attempted to force some storage from an invalid subpool.

Kam Jain

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

ACM SIGMOD Workshop on Data Description,
Access and Control, Ann Arbor, 1974.
Data models: data structure-set versus relational, ed. by R. Rustin.
New York, ACM 1975

ACM SIGPLAN-SIGMICRO Interface Meeting, Harriman, N.Y., 1973.
Programming languages - micro-programming.
New york, ACM, 1973.

Blaauw, Gerrit A.
Digital system implementation.
Englewood Cliffs, N.J., Prentice-Hall, 1976.

Bohm, Corrado, ed.
-calculus and computer science theory.
Berlin, Springer-Verlag, 1975.

Bondy, J.A. and Murty, U.S.R.
Graph theory with applications.
London, Macmillan, 1976.

Brandon, Dick H. and Segelstein, S.
Data processing contracts: structure, contents, and negotiation.
New York, Van Nostrand Reinhold, 1976.

Charniak, Eugene and Wilks, Y., eds.
Computational semantics: an introduction to artificial intelligence and natural language comprehension.
Amsterdam, North-Holland, 1976.

Delves, L.M. and Walsh, J., eds.
Numerical solution of integral equations.
Oxford, Clarendon Press, 1974.

Gelenbe, Erol, and Mahl, R., eds.
Computer architectures and networks: modelling and evaluation.
Amsterdam, North-Holland, 1974.

cont´d...

RECENT ACQUISITIONS cont´d

Greibach, Sheila A.
Theory of program structures: schemes, semantics, verification.
Berlin, Springer-Verlag, 1975.

Habermann, Arie Nicolaas.
Introduction to operating system design.
Chicago, Science Research Assoc., 1976.

Hilburn, John L. and Julich, P.M.
Microcomputers/microprocessors: hardware, solftware, and applications.
Englewood Cliffs, N.J., Prentice-Hall, 1976.

IFIP TC-w Special Working Conference on Data Base Description, Wepion, Belgium, 1975.
Data base description, ed. by B.C.M. Douque and G.M. Nijssen.
Amsterdam, North-Holland, 1975.

IFIP Technical Conference on Optimization Techniques, Novosibirsk, 1974.
Optimization techniques, ed. by G.I. Marchuk.
Berlin, Springer-Verlag, 1975.

International Conference on Computer Communication, 2d, Stockholm, 1974.
Computer communication.
International Council of ICCC, 1974.

Lincoln, Harry B., ed.
The computer and music.
Ithaca, N.Y., Cornell University Press, 1970.

McCracken, Daniel D.
A simplified guide to structured COBOL programming.
New York, Wiley, 1976.

Pagan, Frank George.
A practical guide to Algol 68.
London, Wiley, 1976.

Pierre, Donald A. and Lowe, M.J.
Mathematical programming via augmented lagrangians
Reading, Mass., Addison Wesley, 1975.

Ralston, Anthony and Meek, C.L., eds. 1st ed.
Encyclopedia of computer science.
New York, Petrocelli/Charter, 1976.

Rheinboldt, Werner C.
Methods for solving systems of nonlinear equations.
Philadelphia, SIAM, 1974.

Rosenfeld, Azriel and Kak, A.C.
Digital picture processing.
New York, Academic Press, 1976.

Severance, Dennis Gordon.
Some generalized modeling structures for use in design of file organizations.
Ann Arbor, University of Michigan, 1972. (PhD thesis)

Smith, Brian T., et al.
Matrix eigensystem routines - EISPACK guide. 2d ed.
Berlin, Springer-Verlag, 1976.

Soucek, Branko.
Microprocessors and microcomputers.
New York, Wiley, 1976.

Symposium on Analytic Computational Complexity, Carnegie-Mellon Univ., 1975.
Analytic computational complexity, ed. by J.F. Traub.
New York, Academic Press, 1976.

Symposium on Foundations of Computer Science, 17th, Houston, 1976.
Foundations of computer science.
Long Beach, Cal., IEEE, 1976.

Symposium on New Directions and Recent Results in Algorithms and Complexity, Carnegie-Mellon University, Apr. 1976.
Algorithms and complexity: new directions and recent results, ed. by J.F. Traub.
New York, Academic Press, 1976.

Symposium on Sparse Matrix Computations, Argonne National Laboratory, 1975.
Sparse matrix computations, ed. by J.R. Bunch and D.R. Rose.
New York, Academic Press, 1976.

cont´d...

RECENT ACQUISITIONS cont´d

Weinberger, Hans F.
Variational methods for eigenvalue approximation.
Philadelphia, SIAM, 1974.

Yeh, Raymond Tzuu-Yau, ed.
Applied computation theory: analysis, design, modeling.
Englewood Cliffs, N.J., Prentice-Hall, 1976.

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream, APL SV and TSO services
- 4 megabytes of memory
- 1 drum (2301)
- 18 disk drives (3330)
- 9 disk drives (2314)
- 6 magnetic tape drives (4 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 1536K bytes of core
- 26 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL and ATS

COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 System with
  - 1 PDP-11/40 CPU
  - 2 RK05 disk drives
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - 1 300 lpm line printer
  - 1 220 lpm lower case line printer
  - 1 paper tape reader/punch
  - VT11 graphics display unit
  - Lab. peripheral system with A/D and D/A
  - 1 Digitizing Tablet (20" by 20")
  - 1 ZETA incremental plotter (11")
  - 1 CVI 260 Video Bandwidth Compressor
  - 1 CVI 261 Video Bandwidth Expander
- DEC GT40 System with
  - 1 PDP-11/05 CPU
  - 3 DIABLO disk drives (RK05 type)
  - 1 9-track/800 BPI tape drive
  - VT11 graphics display unit
  - 1 Digitizing Tablet (20" by 20")
  - Card reader and line printers shared with GT44

TEMPORARY UTCC DIRECTORY

	ROOM	PHONE
ACTING DIRECTOR		
Rein Mikkor	NP351	5058
INFORMATION OFFICE		
General Inquiries	EA206	4990
Marg Doherty	EA206	4990
MANAGER, SERVICES		
Stan Yagi	SG200	7331
INFORMATION SERVICES		
Don Gibson	EA206	4990
SUPERVISOR, CUSTOMER SERVICES		
Bill Foster	SG301	6021
COMPUTING CO-ORDINATORS		
Sandford Fleming Terminal		
Mark Tapia	EA207	8599
Program Advisors	EA207	8599
Erindale		
Clem DiPlacido		828-5311
Scarborough		
Martin Hubel		284-3173
Arts and Science		
Jill Reece	SS2104	6509
New Physics		
Bob Chambers	NP1201	8823
SUPERVISOR, APPLICATIONS SUPPORT		
Herb Kugel	SG304	7286
MANAGER, OPERATIONS		
Derry Cox	EA206	7092
SUPERVISORS, OPERATIONS		
Paul Scarborough (S/370-165-II)	SF105	6220
Kam Jain (S/360-65)	NP333	7374
Dave Wong (S/370-155)		6864
MANAGER, SYSTEMS		
Rein Mikkor	NP351	5058
SYSTEM HARDWARE SUPERVISOR		
Eugene Siciunas	EA206	7092
MANAGER, COMPUTER RESEARCH FACILITY		
Dennis Smith	SF207	4086
LAB CO-ORDINATOR (CRF)		
Krishna Patnaik	SF207	4086
ACCOUNTS		
Ann DeFazio	EA206	8703
Yvonne Bowen	EA206	8703
ACCESS CODES		
Gail Cavers	EA206	8703
MANAGER, INFORMATION SYSTEMS		
Sean Keeley		3579

NOTE:

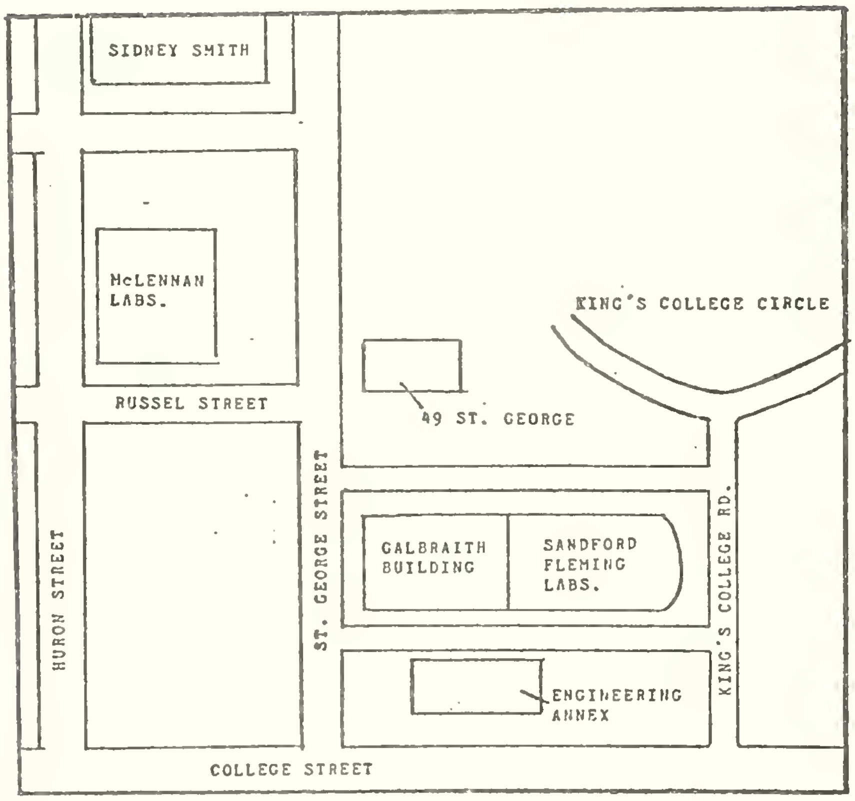
EA = Engineering Annex
SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith

JOB AND SYSTEM STATUS QUERIES

SYSTEM/370,TSO	7373
ATS/APL	6234
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

SERVICES

	DIAL-UP	ADVICE
APL - 2741	7200	6710
APL(ASCII	7200	6710
APL SV - 2741	7239	6710
APL SV - TTY	7447	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710



UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA,